narum I" records 10 species and several varieties as new to science.—F. A. WOLF (Mycologia 2:19–22. *pl. 18.* 1901) has published a new species of Fusarium, parasitic on *Viola tricolor*.—H. WOLFF (Rep. Nov. Sp. 7:345, 346. 1909) has published a new species of Eryngium (*E. affine*) from Costa Rica.—C. H. WRIGHT (Kew Bull. 24. 1910) describes a new species of Urceocharis from Peru.—Different authors (*ibid.* 357–362. 1909) under the heading "Decades kewensis LIV" have published a number of new species of flowering plants, including a new genus (*Micholtzia*) of the Asclepiadaceae from India; also a new genus (*Ennealophus*) of the Iridaceae from Brazil.—J. M. GREENMAN.

A new genus of chytrids.—A minute organism parasitic in the leaf blades and petioles of the ragweed (*Ambrosia artemisiaefolia*) is described by GRIGGS[3] as a new genus. The swarm spores perforate the cell wall and enter the cells (epidermal, hypodermal, or chlorenchymal), sometimes in large numbers, where they present amoeboid forms within the plasma of the host. Some of the "amoebulae" unite in pairs by the fusion of their plasma while the nuclei remain distinct. This minute amoeboid zygote grows to form a binucleate resting spore which at maturity is provided with a stout exospore wall. The germination has not been studied. Other swarm spores, in the same or other cells, grow to form zoosporangia about 70 μ in diameter, showing also amoeboid movements in the vegetative stage. The nucleus of the young "amoebula" which is to form a zoosporangium is said to "fragment" into four nuclei at an early stage. Since the figure given presents just as much evidence that the four nuclei are derived by mitotic division as by fragmentation, it would be interesting to know if this is the period of meiosis. A rather extended period then follows before further successive division of these four nuclei to form the zoospores, which are 2.5 μ. The author saw no mitotic figures, but states that in some cases at least there is evidence that the nuclei fragment. The formation and escape of the zoospores was not observed, and he does not know whether the zoospores are ciliate or amoeboid, the latter he thinks more likely. Since the escape of the zoospores was not observed, he does not know whether or not an exit tube is formed from the sporangium. The species, which he names *M. stevensianum*, is associated with *Rhodochytrium spilanthides*, and while the infected cells increase greatly in size, very little deformity of the host occurs, although large numbers of cells in a limited area are affected.

Some of the speculations appear to be based on a misinterpretation of some statements of the reviewer in regard to the behavior of the zoospores of Rhizophidium, for he says: "ATKINSON has shown that when liberated inside the sporangium the zoospores swim actively forward until they strike the wall of the sporangium, when the flagella are retracted and the zoospore puts out pseudopodia by which it gropes for the opening of the sporangium. In case it is located too far from the ostiole to reach it with its pseudopodia, it resumes its flagellate form and

[3] GRIGGS, R. F., Monochytrium, a new genus of the Chytridiales, its life history and cytology. Ohio Nat. 10:44–54. *pls. 3, 4.* 1910.

swims about again until it finally escapes." The reviewer did not state that the flagellum is retracted[4] when the amoeboid movements take place and does not regard it as at all likely that such is the case.

GRIGGS places the organism in the Olpideaceae, and states that it may be separated at once from all other genera of this family by its habitat. "All the other genera are parasites of aquatic plants or animals except Asterocystis, which infests the roots of the seed plants." He has probably overlooked certain species of Olpidium. *O. brassicae* (Wor.[5]) Dang.,[6] a typical Olpidium, is parasitic in the stems of cabbage seedlings. *O. simulans* (DeBary and Wor.[7]) Dang.[8] (see also A. FISCHER[9]) is parasitic in young leaves of *Taraxacum officinale* and is associated with *Synchytrium taraxaci*. SCHROETER[10] is inclined to believe this is a Pleolpidium, but it would still be a member of the Olpidiaceae. *Olpidium trifolii* (Pass.[11]) SCHROETER[12] on petioles and leaf blades of *Trifolium repens* is more doubtful; A. FISCHER[13] thinks it is a Synchytrium.

It is unfortunate that the author did not compare his organism with the genus *Reesia* Fisch[14] (pp. 8–17), since until we know more about the dehiscence of the zoosporangium and the form of the active zoospores, it would seem more reasonable to place it in this genus than to create a new one, largely hypothetical; for if the zoosporangia develop exit tubes and the zoospores are uniciliate, which is not unlikely, it would be a true Reesia.—GEO. F. ATKINSON.

Morphology of the grass flower.—SCHUSTER[15] has recently made extended investigations upon the structure and morphology of the flowers and spikelets of grasses. His results are based upon an examination of fresh and alcoholic

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[4] See BOT. GAZETTE **48**:321, 322, 324. 1909.

[5] *Chytridium brassicae* Woronin, M. (see pp. 556–558. *pl. 31. figs. 12–18*) in *Plasmodiophora brassicae*, Urheber der Kohlpflanzen-Hernie. Jahrb. Wiss. Bot. **11**:549–574. *pls. 29–34.* 1878.

[6] DANGEARD, P., Ann. Sci. Nat. Bot. VII. **4**:285, 327. 1886.

[7] *Chytridium* (*Olpidium*) *simulans* DeBary and Wor. (see p. 29. *pl. 2. figs. 11–16*), Beitrag zur Kenntniss der Chytridieen. Ber. Naturf. Ges. Freiburg **3**:Heft 2 (1–40 of separate). *pl. 1.* 1863.

[8] Rabenh., Krypt. Fl. Pilze **4**:29. 1892.

[9] ENGLER AND PRANTL, Pflanzenfam. **1**[1]:70. 1889.

[10] *Synchytrium trifolii* Pass. in Rab. Fung. Europ. 2419. 1877.

[11] COHN'S Krypt. Fl. Schles. Pilze **1**:181. 1889; and ENGLER und PRANTL, Pflanzenf. **1**[1]:68. 1889.

[12] Rabenh., Krypt. Fl. Pilze **4**:51. 1892.

[13] FISCH, CARL, Beitrag zur Kenntniss der Chytridiaceen. pp. 48. *pl. 1.* Erlangen. 1884.

[14] SCHUSTER, J., Ueber die Morphologie der Grasblüte. Flora **100**:213–266. *pls. 2–5. figs. 35.* 1910.